Amendments to the Claims:

This listing of claims will replace all prior versions, and listings of claims in the application:

Listing of Claims:

1. (Currently Amended) A method for localization of a shape in a space represented by pixel data forming a multidimensional space i, j, evolving with time, and represented at a succession of instants T, wherein the data is associated with a plurality of parameters {A, B, ...} in the form of digital signals {DATA(A), DATA(B),...} composed of a sequence $\{A_{ijt}, B_{ijt}, ...\}$ of binary numbers of n bits associated with synchronization signals defining the instants T of the space and the position i, j in the space, at which the signals $\{A_{ijt}, B_{ijt},...\}$ are received, the method comprising:

a) receiving the pixel data;

b) identifying a main region of interest of the space based on a statistic criterion applied to one of said parameters, the identified region having a center of gravity;

c) repeating step b) using the pixel data associated with the main region of interest so as to identify one or more other regions inside the main region;

d) for each identified region of interest, incrementing a counter for each consecutive valid frame; and

e) recording the center of gravity of each identified region of interest for each valid frame,

wherein a counter is associated with each identified region of interest, and a counter value is incremented by one unit at each of successive frames from which the region of interest is identified, and the value of each counter is reset to the first frame for which the corresponding region is not identified.

2. (Canceled)

3. (Original) The method of claim 1, wherein the position of the center of gravity of the points defining a region of interest is stored in a memory.

4. (Original) The method of claim 1, wherein each region of interest is validated for one value of its associated counter that is greater than 1.

5. (Original) The method of claim 4, wherein the validated region is identified by its center of gravity, the orientation of its projection axes and the sizes of the associated frame.

6. (Original) The method of claim 5, wherein the center of gravity, the main axes of the frame and the size of the frame, are respectively the position, the orientation and the size of the object perceived.

7. (Currently Amended) The method of claim 1 ~~claim 2~~, wherein inside each region of interest, one or more secondary regions defined by one or more selection criteria are registered.

8. (Original) The method of claim 7, wherein a secondary region plays the part of the region of interest, which leads to registering tertiary regions.

9. (Original) The method of claim 7, wherein localization of the said secondary regions is used for tracking movement within the main region.

10. (Original) The method of claim 1, wherein the parameter is velocity.

11. (Original) The method of claim 1, wherein the parameter is a luminance level.

12. (Original) The method of claim 1, wherein the parameter is a color.

13. (Original) The method of claim 1, wherein the parameter is spatial resolution.

14. (Original) The method of claim 1, wherein the parameter is field depth.

15. (Original) The method of claim 1, wherein the registered region is defined with respect to a mark selected among several marks of different orientations.

16. (Original) The method of claim 1, wherein the relative positions of the centers of gravity of the regions of interest registered serve for controlling the shape of an object perceived.

17. (Original) The method of claim 1, wherein the shape is a human face.

18. (Original) The method of claim 17, wherein the main region is the face and secondary regions are selected from one or more of the eyes, the mouth, the eyebrows and the nose.

19. (Currently Amended) A processing device configured to localize a shape in a space represented by pixel data forming a multidimensional space i, j, evolving with time, and represented at a succession of instants T, wherein the data is associated with a plurality of parameters {A, B, ...} in the form of digital signals {DATA(A), DATA(B),...} composed of a sequence $\{A_{ijt}, B_{ijt}, ...\}$ of binary numbers of n bits associated with synchronization signals defining the instants T of the space and the position i, j in this space, at which the signals $\{A_{ijt}, B_{ijt}, ...\}$ are received, the device comprising:

first and second histogram calculation units receiving the signals and each generating a classification value;

wherein the <u>first</u> unit receives a signal carrying a first temporal parameter and the second unit receives two spatial signals;

wherein the classification value of the first unit validates a group of points in space that are processed by the second unit, the number of points being n_1, the classification value of the second unit validating the parameter values processed by the first unit, wherein the units generate jointly a binary signal ZA representing a region of interest and a signal P representing the value of the temporal parameter in the region of interest.

20. (Original) A device according to claim 19, further comprising a third histogram calculation unit configured to receive a signal carrying a second temporal parameter, wherein the third unit operates similarly to the first unit and replaces the first unit when validating a space having a number n_2, of points, wherein n_2 is greater than n_1.

21. (Original) A device according to claim 19, further comprising a plurality of histogram calculation units configured to receive space signals so as to provide successive validation of several groups of space points.

22. (Original) A device according to claim 19, wherein the histogram calculation units are controlled by instructions received from API software, and are coupled together by a data bus and by a feedback bus.

23. (Currently Amended) A method for localization of a shape in a space represented by pixel data forming a multidimensional space i, j, evolving with time, and represented at a succession of instants T, wherein the data is associated with a plurality of parameters {A, B, ...} in the form of digital signals {DATA(A), DATA(B),...} composed of a sequence $\{A_{ijt}, B_{ijt}, ...\}$ of binary numbers of n bits associated with synchronization signals defining the instants T of the space and the position i, j in the space, at which the signals $\{A_{ijt}, B_{ijt},...\}$ are received, the method comprising :

a) receiving the pixel data;

b) identifying a region of interest of the space based on a statistic criterion applied to one of said parameters, the region of interest having a center of gravity;

c) repeating step b) one or more times using the pixel data not associated with a previously identified region of interest so as to identify one or more other regions of interest;

d) for each identified region of interest, incrementing a counter for each consecutive valid frame; and

e) recording the center of gravity of each identified region of interest for each valid frame,

wherein a counter is associated with each identified region of interest, and a counter value is incremented by one unit at each of successive frames from which the region of interest is identified, and the value of each counter is reset to the first frame for which the corresponding region is not identified.

24. (New) A method for localization of a shape in a space represented by pixel data forming a multidimensional space i, j, evolving with time, and represented at a succession of instants T, wherein the data is associated with a plurality of parameters {A, B, ...} in the form of digital signals {DATA(A), DATA(B),...} composed of a sequence $\{A_{ijt}, B_{ijt}, ...\}$ of binary numbers of n bits associated with synchronization signals defining the instants T of the space and the position i, j in the space, at which the signals $\{A_{ijt}, B_{ijt},...\}$ are received, the method comprising:

a) receiving the pixel data;

b) identifying a main region of interest of the space based on a statistic criterion applied to one of said parameters, the identified region having a center of gravity;

c) repeating step b) using the pixel data associated with the main region of interest so as to identify one or more other regions inside the main region;

d) for each identified region of interest, incrementing a counter for each consecutive valid frame; and

e) recording the center of gravity of each identified region of interest for each valid frame, and

wherein for identifying a main region of interest, first and second histogram calculation units receive the signals and each generates a classification value; the first unit receiving a signal carrying a first temporal parameter and the second unit receiving two spatial signals;

wherein the classification value of the first unit validates a group of points in space that are processed by the second unit, the number of points being n_1, the classification value of the second unit validating the parameter values processed by the first unit, wherein the units generate jointly a binary signal ZA representing a region of interest and a signal P representing the value of the temporal parameter in the region of interest.

25. (New) The method of claim 24, wherein a counter is associated with each identified region of interest, and a counter value is incremented by one unit at each of successive frames from which the region of interest is identified, and the value of each counter is reset to the first frame for which the corresponding region is not identified.

26. (New) The method of claim 24, wherein the position of the center of gravity of the points defining a region of interest is stored in a memory.

27. (New) The method of claim 24, wherein each region of interest is validated for one value of its associated counter that is greater than 1.

28. (New) The method of claim 27, wherein the validated region is identified by its center of gravity, the orientation of its projection axes and the sizes of the associated frame.

29. (New) The method of claim 28, wherein the center of gravity, the main axes of the frame and the size of the frame, are respectively the position, the orientation and the size of the object perceived.

30. (New) The method of claim 25, wherein inside each region of interest, one or more secondary regions defined by one or more selection criteria are registered.

31. (New) The method of claim 30, wherein a secondary region plays the part of the region of interest, which leads to registering tertiary regions.

32. (New) The method of claim 30, wherein localization of the said secondary regions is used for tracking movement within the main region.

33. (New) The method of claim 24, wherein the parameter is velocity.

34. (New) The method of claim 24, wherein the parameter is a luminance level.

35. (New) The method of claim 24, wherein the parameter is a color.

36. (New) The method of claim 24, wherein the parameter is spatial resolution.

37. (New) The method of claim 24, wherein the parameter is field depth.

38. (New) The method of claim 24, wherein the registered region is defined with respect to a mark selected among several marks of different orientations.

39. (New) The method of claim 24, wherein the relative positions of the centers of gravity of the regions of interest registered serve for controlling the shape of an object perceived.

40. (New) The method of claim 24, wherein the shape is a human face.

41. (New) The method of claim 40, wherein the main region is the face and secondary regions are selected from one or more of the eyes, the mouth, the eyebrows and the nose.